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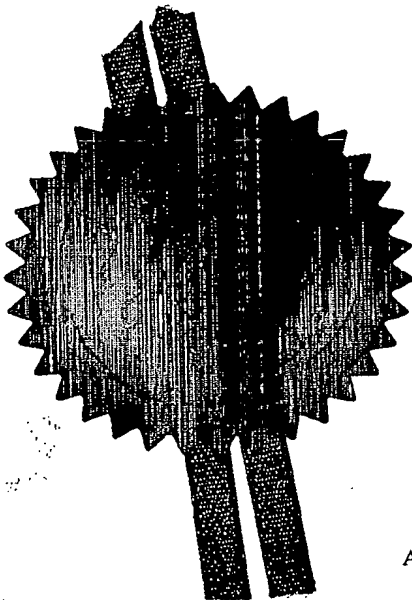
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*Andrew Gersey*

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Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

THE PATENT OFFICE
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29 MAR 2004

LONDON

The Patent Office

Cardiff Road
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1. Your reference

~~M29482~~ P18688Gb

2. Patent application number

(The Patent Office will fill this part in)

0407060.3

29 MAR 2004

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Sports Analysis Limited
Glen House,
The Glen,
London Road,
Sunninghill, Berkshire, SL5 7DG

Patents ADP number (if you know it)

8839193001

If the applicant is a corporate body, give the country/state of its incorporation

UK

4. Title of the invention

A PROCESS AND SYSTEM FOR PRODUCING OR GENERATING A MAP

5. Name of your agent (if you have one)

Forrester Ketley & Co.

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Forrester House
52 Bounds Green Road
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N11 2EY

Patents ADP number (if you know it)

133001 ✓

6. Priority: Complete this section if you are declaring priority from one or more earlier patent applications, filed in the last 12 months.

Country

Priority application number
(if you know it)

Date of filing
(day / month / year)

7. Divisionals, etc: Complete this section only if this application is a divisional application or resulted from an entitlement dispute (see note f)

Number of earlier UK application

Date of filing
(day / month / year)

8. Is a Patents Form 7/77 (Statement of inventorship and of right to grant of a patent) required in support of this request?

Answer YES if:

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

YES

Otherwise answer NO (See note d)

Patents Form 1/77

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9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form -
Description 7
Claim(s) 2
Abstract -
Drawing(s) 2 only

10. If you are also filing any of the following, state how many against each item.

Priority documents -
Translations of priority documents -
Statement of inventorship and right to grant of a patent (Patents Form 7/77) -
Request for a preliminary examination and search (Patents Form 9/77) 1 ✓
Request for a substantive examination (Patents Form 10/77) -
Any other documents (please specify) -

11. I/We request the grant of a patent on the basis of this application.

Signature(s)

Forrester Ketley & Co.

Date 29 March 2004

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom

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PATENTS ACT 1977

M29182 - JVG/RTW/jfj

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**"A PROCESS AND SYSTEM FOR PRODUCING OR
GENERATING A MAP"**

The present invention relates to a process and system for producing or generating a map. In particular, the present invention relates to a process and system for producing or generating a map of a golf course. More particularly, the present invention relates to a process and system for producing or generating a golf course guide, which is graduated to show the distance from at least one fixed point on a hole of the golf course to the pin or pin position of that hole.

15

Generally, golf course guides include a map of each hole of the course, which are usually graduated illustrating the distance from the tee to the front or centre of the green or vice versa and to hazards such as bunkers and water.

20

The main advantage of a golf course guide is that they can assist golfers of all abilities to select the most appropriate club, that is, in the light of their position on the hole. As will be appreciated this can speed up play.

25

One of the major disadvantages of current golf course guides is that they do not actually show or represent the distance to the actual pin and, as such, are not that accurate. This is primarily occasioned by the fact that it is common practice to regularly relocate, sometimes daily, the pin on the green. As will be appreciated, such relocation can result in the pin moving up to 30 or 40 metres from its previous location.

The Global Positioning System (GPS) was introduced by the U.S. Department of Defence with a view to providing a precise form of world wide positioning.

5

The GPS is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. GPS uses these "man-made stars" as reference points to calculate positions on the earth, which are accurate to a matter of metres. In fact, with advanced forms of GPS, measurements can be taken, which are accurate to less than a centimetre.

10

To increase the level of accuracy of GPS over Europe, the European Space Agency, the European Commission and Eurocontrol, have launched a project called EGNOS (European Geostationary Navigation Overlay Service).

15

EGNOS consists of three geostationary satellites and a network of ground stations that transmit signals containing information on the reliability and accuracy of the positioning signals sent out by GPS.

20

By early 2004, the full network needed for this augmentation system will have been deployed all around Europe and beyond. It will comprise monitoring stations, called RIMSs (Ranging and Integrity Monitoring Stations), and several Master Control Centres, the first of which is already installed in Langen, Germany. Altogether, nearly 40 stations will be deployed.

25

An object of the present invention is to provide a golf course guide which overcomes or at least addresses the disadvantages outlined above. In particular, an object of the present invention is to provide a system and process, which utilise GPS to provide a more accurate and up-to-date golf course guide,

which is readily producible, can even be produced on demand or even daily, and moreover, is graduated showing the current, real distance between at least one fixed point on a hole and the pin.

5 According to a first aspect of the present invention, there is provided a process for generating a map of a hole of a golf course, the map including at least one graduation showing the distance between a pin and a fixed point on the hole, the process including the steps of:

 taking a GPS reading of the location of the pin; and
10 generating the map based on the reading.

 As will be appreciated, the process of the present invention enables an up-to-date, accurate map of a hole, which shows the distance between at least one fixed point on the hole to the pin, to be readily generated as soon as the pin
15 is relocated.

 Preferably, the GPS reading is taken by placing a hand held GPS receiver over the pin, for example, a GEO EXPLORER XT supplied by Trimble Navigation Ltd, Sunnyvale, California, USA or a RECON supplied by
20 Tripod Datasystems (TDS), Oregon, USA.

 Further preferably, the GPS reading is taken by locating a pole mounted receiver in the pin, for example, TRIMBLE.

25 Advantageously, the map is generated by printing graduations on a card which already includes a graphic representation of the hole.

One non-limiting embodiment of the process of the present invention will now be described below with reference to Figures 1 A and B, which illustrates a map generated in accordance with the process of the present invention.

Firstly, and as will be appreciated, before a golf course guide can be generated, it will be necessary to actually map the golf course.

Although the present invention is not primarily concerned with the initial mapping procedure *per se*, it will nevertheless be described below for the sake of completeness.

One way of initially mapping a golf course involves taking aerial photographs of the course from a height of at least 1500 metres using, for example, Ordnance Survey equipment. Once taken, a graphic of each hole on the course can be produced utilising a GPS mapping device. That is, GPS reference points can be taken from various fixed points from the aerial photograph and a graphic of each hole of the course can be produced via the process of aerial triangulation. Such graphic can then be incorporated into a golf course guide, which may be in the form of a booklet or even a card.

A second way of initially mapping a golf course, which does not require the use of aerial photography, involves mapping the course on foot. This involves the use of a GPS mapping device and entails walking the course and taking a number of GPS reference points on the course. Once the entire course is GPS referenced, a graphic of each hole of the course can be generated. Once again, such graphic can be incorporated into a golf course guide in the form of a booklet or even a card.

As touched upon above, the present invention is not primarily concerned with the initial mapping procedure, but rather, is concerned with updating a template of the graphic such that an up-to-date graduated graphic, which takes
5 into account any changes in the course, for example, the relocation of the pin, can be readily generated and incorporated into a golf course guide.

In accordance with the present invention, in the event that the pin is moved, which they regularly are, a greenkeeper or other person associated with
10 the course, will proceed to the new location of the pin with a GPS receiver, that is, in order to take a new GPS reference point. Such a receiver, can either be a hand held GPS receiver, for example, a GEO EXPLORER XT supplied by Trimble Navigation Ltd, Sunnyvale, California, USA or a RECON supplied by Tripod Datasystems (TDS), Oregon, USA. In use, the receiver would be
15 positioned over the new hole and a new reading would be taken. Alternatively, and for more accuracy, the aforementioned receiver could be used in combination with what is known in the art as a "beacon on the belt", namely, a pole mounted aerial. In use, the pole, upon which the beacon is mounted, would be located in the hole such that a GPS reading could be taken. In
20 addition, a further reading would be taken with the hand held receiver as described above. In a further embodiment, any one of the aforementioned receivers could be mounted on a tripod, which, in use, would be located over the hole such that the appropriate readings could be taken.

25 Once the new GPS reference point has been recorded, it is then relayed back to a database or host system, which includes or holds the original graphic of the hole and/or its associated graduations i.e. the original template of the map. The template is then automatically updated to incorporate the current location of the pin and a new graphic of the hole showing the new graduated

location of the pin can be automatically generated. Such graphic can then be printed out to be incorporated into a course guide either in the form of a booklet or a card. It is to be understood that the resultant graphic can be in colour or in black or white. In addition, it is also to be understood that the template, which
5 is to be updated, may consist solely of the graduations and it is the graduations themselves which are printed onto a pre-existing map or graphic representation of the hole. For example, and with reference to Figures 1A and B, a card is provided which includes a graphic representation of a hole 10 on a golf course. As can be seen such graphic illustrates the location of the pin 11 and some
10 bunkers 12.

In the event that the card is to be graduated, that is, once the appropriate readings have been taken, the card is placed in a receiving tray of a printer and the graduations or measurements illustrating the distance from two fixed points
15 to the pin can be printed as an overlay onto the card. This is illustrated by Figure 1B.

Although the present invention has been described by way of reference to updating the graduations pertaining to the location of the pin, it is to
20 understood that any location on a hole can be updated.

In a further aspect of the present invention there is provided a system for generating a map of a hole of a golf course, the map including at least one graduation showing the distance between a pin and a fixed point on the hole,
25 the system including:

- means for taking a GPS reading of the location of the pin; and
- means for generating the map based on the reading.

Preferably, the means for taking a GPS reading includes a handheld GPS receiver, for example, a GEO EXPLORER XT supplied by Trimble Navigation Ltd, Sunnyvale, California, USA or a RECON supplied by Tripod Datasystems (TDS), Oregon, USA

5

Further preferably, the means for taking a GPS reading include a pole mounted GPS receiver, for example, a TRIMBLE.

Advantageously, the means for generating the map include a printer,
10 preferably a colour printer, laser or otherwise.

When used in this specification and claims, the terms "comprises" and "comprising" and variations thereof mean that the specified features, steps or
15 integers are included. The terms are not to be interpreted to exclude the presence of other features, steps or components.

The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in
20 terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

Claims:

1. A process for generating a map of a hole of a golf course, the map including at least one graduation showing the distance between a pin and a
5 fixed point on the hole, the process including the steps of:
taking a GPS reading of the location of the pin; and
generating the map based on the reading.
2. The process of claim 1, wherein the GPS reading is taken by
10 placing a hand held GPS receiver over the pin.
3. The process of claim 1 or 2, wherein the GPS reading is taken by locating a pole mounted receiver in the pin.
- 15 4. The process of any one of claims 1 to 3, wherein the map is generated by printing graduations on a card which includes a graphic representation of the hole.
5. A system for generating a map of a hole of a golf course, the map
20 including at least one graduation showing the distance between a pin and a fixed point on the hole, the system including:
means for taking a GPS reading of the location of the pin; and
means for generating the map based on the reading.
- 25 6. The system of claim 5, wherein the means for taking a GPS reading includes a handheld GPS receiver.
7. The system of claim 5 or 6, wherein the means for taking GPS reading include a pole mounted GPS receiver.

8. The system of any one of claims 5 to 7, wherein the means for generating a map include a printer.

5 9. A process for generating a map of a hole of a golf course, the map including at least one graduation showing the distance between a pin and a fixed point on the hole substantially as hereinbefore described and exemplified.

10 10. A system for generating a map of a hole of a golf course, the map including at least one graduation showing the distance between a pin and a fixed point on the hole substantially as hereinbefore described.

11. A map produced by the process of any one of claims 1 to 4.

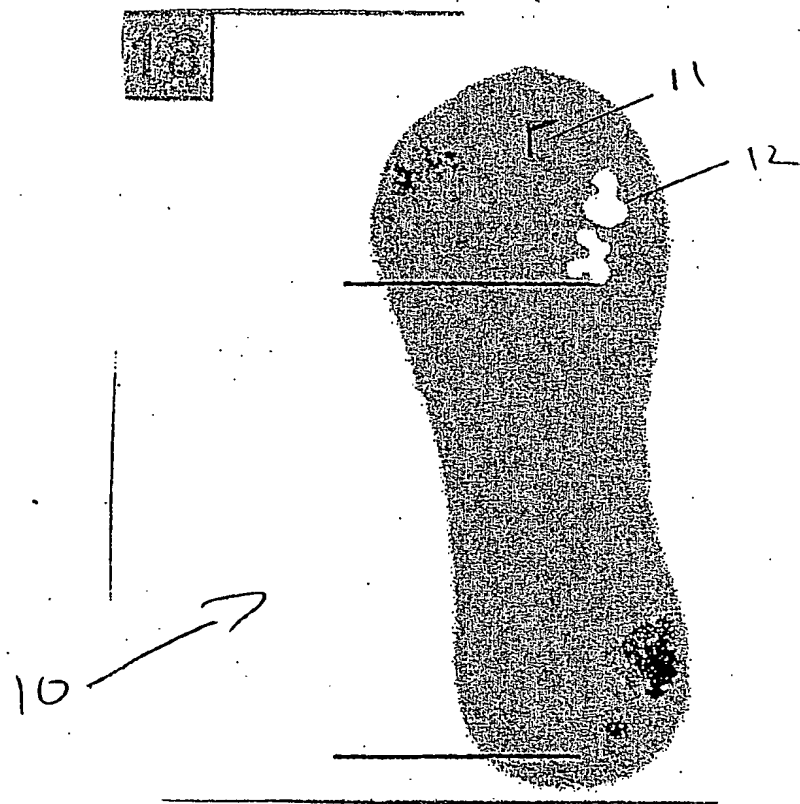


Fig. 1 A.

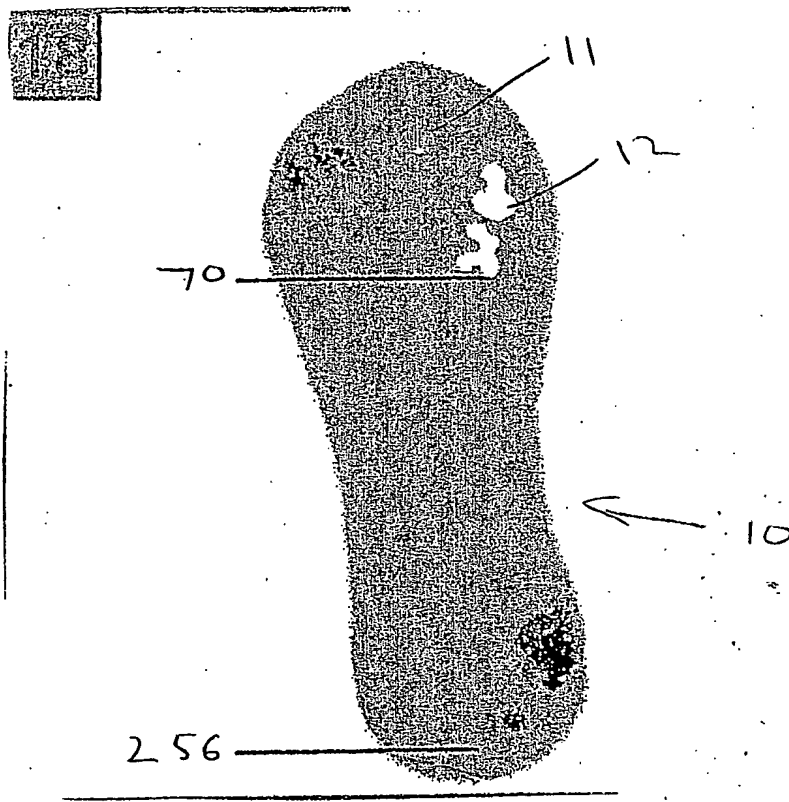


Figure 1B